

Appl. No. 10/781,154
Amdt. Dated July 26, 2006
Reply to Office Action of April 28, 2006

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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the above-identified application:

1. (currently amended): A method for correcting and/or preventing an over-temperature condition in an auxiliary power unit comprising:

measuring an exhaust gas temperature of the auxiliary power unit;

comparing the exhaust gas temperature to a predetermined temperature trim limit to determine a temperature trim error;

calculating selecting a fuel flow trim value based on the determined temperature trim error, the fuel flow trim value selected to be either (i) the determined temperature trim error, if the temperature trim error is greater than zero, or (ii) zero, if the temperature trim error is not greater than zero;

subtracting the selected fuel flow trim value from a starting fuel flow value to get a trimmed commanded fuel flow value; and

delivering fuel to the auxiliary power unit at said trimmed commanded fuel flow value.

2. (original): The method according to claim 1, wherein the method is used during starting of the auxiliary power unit.

3. (original): The method according to claim 1, further comprising determining the starting fuel flow value based upon speed, air pressure and temperature of the auxiliary power unit.

4. (original): The method according to claim 3, further comprising providing an upper limit at a predetermined maximum fuel schedule and a lower limit at a predetermined minimum fuel schedule for the starting fuel flow value.

5. (canceled).

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6. (currently amended): A method for correcting and/or preventing an over-temperature condition during starting of an auxiliary power unit of an aircraft comprising:

measuring an exhaust gas temperature of the auxiliary power unit;

comparing the exhaust gas temperature to a predetermined temperature trim limit to determine a temperature trim error;

~~calculating~~ selecting a fuel flow trim value based on the determined temperature trim error, the fuel flow trim value selected to be either (i) the determined temperature trim error, if the temperature trim error is greater than zero, or (ii) zero, if the temperature trim error is not greater than zero;

determining a starting fuel flow value based upon speed, air pressure and temperature of the auxiliary power unit;

providing an upper limit at a predetermined maximum fuel schedule and a lower limit at a predetermined minimum fuel schedule for the starting fuel flow value;

subtracting the selected fuel flow trim value from the starting fuel flow value to get a trimmed commanded fuel flow value; and

delivering fuel to the auxiliary power unit at said trimmed commanded fuel flow value[[:]]

~~wherein the trimmed commanded fuel flow value is greater or equal to zero.~~

7-11. (cancelled).

12. (currently amended): A method for preventing and/or correcting undesired operating conditions of an auxiliary power unit comprising:

calculating an engine starting trimmed commanded fuel flow value by:

measuring an exhaust gas temperature of the auxiliary power unit;

comparing the exhaust gas temperature to a predetermined temperature trim limit to determine a temperature trim error;

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~~calculating selecting~~ a fuel flow trim value based on the determined temperature trim error, the fuel flow trim value selected to be either (i) the determined temperature trim error, if the temperature trim error is greater than zero, or (ii) zero, if the temperature trim error is not greater than zero;

subtracting the selected fuel flow trim value from a starting fuel flow value to get the engine starting trimmed commanded fuel flow value;

starting the auxiliary power unit with a fuel flow rate at the engine starting trimmed commanded fuel flow value;

calculating an on-speed trimmed commanded fuel flow value by:

measuring the speed of the auxiliary power unit,

comparing the measured speed to a predetermined speed reference point to determine a speed error,

~~calculating an on-speed fuel flow trim value from the speed error,~~

~~subtracting the on-speed fuel flow trim value from a commanded fuel flow value to get the on-speed trimmed commanded fuel flow value;~~

generating a commanded fuel flow from the determined speed error,

comparing the commanded fuel flow to a predetermined maximum fuel schedule to determine which is lower, and selecting the lower as a commanded fuel flow upper limit

selectively limiting the commanded fuel flow upper limit to an on-speed trimmed command fuel flow value; and

continuing the running of the auxiliary power unit with a fuel flow rate at either the command fuel flow upper limit or the on-speed trimmed commanded fuel flow value.

13. (original): The method according to claim 12, further comprising determining the starting fuel flow value based upon speed, air pressure and temperature of the auxiliary power unit.

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14. (currently amended): The method according to claim 13, further comprising providing an upper limit at a the predetermined maximum fuel schedule and a lower limit at a predetermined minimum fuel schedule for the starting fuel flow value.

15. (canceled).

16. (currently amended): The method according to claim 12, further comprising:

determining an on-speed blowout prevention rate;

comparing the ~~on-speed trimmed commanded fuel flow value~~ commanded fuel flow upper limit to a predetermined ~~on-speed~~ minimum fuel schedule to determine a possibility of blowout at the ~~on-speed trimmed commanded fuel flow value~~ commanded fuel flow upper limit; and

providing fuel to the auxiliary power unit at the on-speed blowout prevention rate when the possibility of blowout is present, thereby preventing blowout of the auxiliary power unit.

17. (original): The method according to claim 16, further comprising providing an upper limit on the on-speed fuel flow trim value at a predetermined maximum fuel schedule.

18-25. (cancelled).